

## Major semi-precious stone retail misidentification – June, 2017, Donald Kasper

Infrared spectroscopy analysis of major errors in identification for the 2017 new year are:

1. **Shattuckite.** This copper material is allegedly coming out of Namibia and is widespread described as shattuckite. Infrared scans of specimens purchased by the author are all chrysocolla. It appears that shattuckite can only form in voids, typically as rock fractures so solid specimens cannot be shattuckite. This identification is apparently done to dramatically increase the prices of the rock.
2. **Sanidine.** There are no free sanidine crystals the author has ever encountered. It occurs intermixed in volcanic rocks related to geode formation. All sanidine sold through EBay the author has purchased, even described as sites documented in the scientific literature as sanidine sites, are all orthoclase. Part of this stems from literature confusion where some demand sanidine does not exist, and it is a variety of orthoclase. From an infrared standpoint, the two are distinct.
3. **Bumblebee jasper.** As sites of agate and jasper are being depleted, various carbonate rocks are being called jasper as calcite is not considered by most to be a gemstone. Bumblebee is 100% calcite according to infrared scans, but trace colorants of yellow sulfur and black organic sludge clearly occur. The organic matter is picked up in infrared. Banded, bumblebee is a travertine, not a jasper.
4. **Sweet Home, OR halite wood.** There is no such thing as halite with notched rhombohedra which is in this wood. It has kaolinite, quartz, and dolomitized radiolarians indicating sea water saturated logs.
5. **Calsilica.** This name may be trademarked. This is shown in infrared to be exclusively calcite and epoxy glue. The colorants are trace and cannot be identified in infrared. This is manmade, and contains zero silica in specimens the author has scanned in infrared.
6. **White Buffalo.** This name may be trademarked. Two sets of specimens obtained by the author from retailers of this material scan in infrared as a mix of aragonite and calcite. There is no copper and no phosphate to base a claim this is white turquoise.
7. **Pristine.** This name may be trademarked. Pristine is sold as a magnesium-silica rock. Infrared shows this is 100% magnesite (magnesium carbonate) and contains zero silica.
8. **Eel River, CA nephrite.** Even a U.S. Geological Survey report in the late 1800's documents nephrite on the Eel River. This identification was based on refractive index, which is worthless for mineral identification of nephrite from many other serpentine minerals such as antigorite, clinocllore, vesuvianite, and diopside. Two specimens obtained by the author from retailers claiming to have Eel River nephrite scan as diopside, one with dark green veining of clinocllore.
9. **Hong Kong turquoise nodules.** Claimed to be turquoise out of China. These are tumbled, round nodules. This scans in infrared as chrysocolla and quartz.
10. **Trent, OR stibnite agate.** This agate contains zero stibnite. It has silica tubes covered in pyrite and manganese.
11. **Laguna Lace.** A deceptive name to confuse the buyer with Mexican Lace, a finely banded seam agate consisting of quartz. Laguna Lace is mined under the Mexican Lace in contact with a limestone basement as the Mexican Lace has been depleted. Laguna Lace is mostly travertine (calcite) with some occasional quartz pseudomorphs of dogtooth calcite.
12. **Gary Green.** Widely cited as fossil wood or bog. This is a volcanic tuff in fine laminar layers comprised of quartz and beta-moganite, indicating high temperature (354 C) exposure.
13. **Ludlow, CA thulite-zoisite.** Very popular site with rock clubs with apple green and pale pink minerals intermixed. While this matches the colors found in zoisite and thulite (the pink variant of zoisite), infrared shows the green is diopside and the pink is epidote.
14. **Xi'an jade, China.** Mixed green and white. Green is antigorite; white is magnesite (magnesium carbonate).

A sampling of semi-precious stone identifications in the book "Semi-precious Stone Identification Using Infrared Spectroscopy", Donald Kasper, 2017, available for sale on Amazon.com.